

Fig. 1

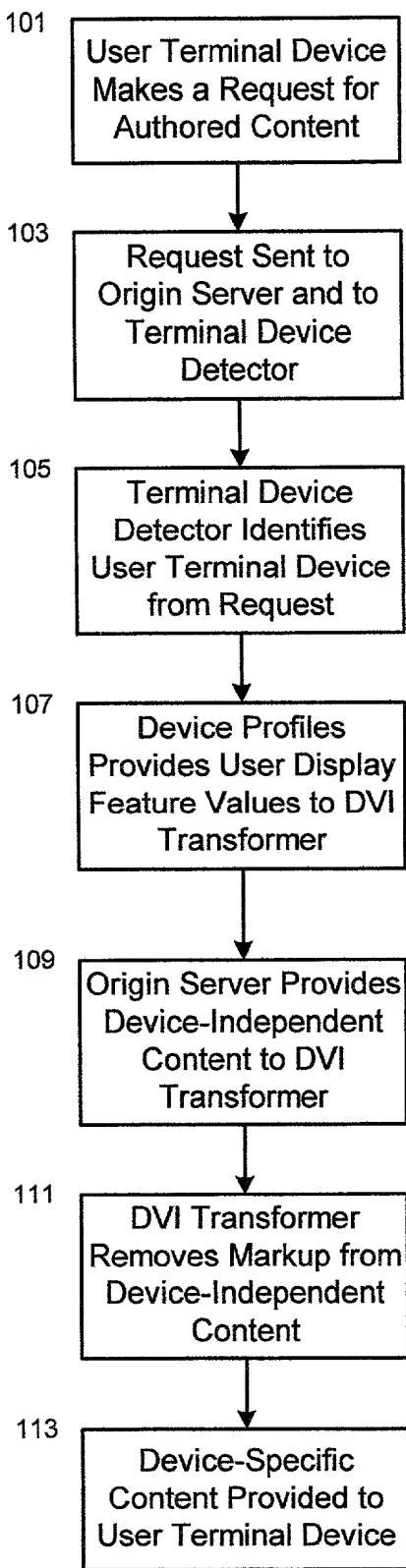


Fig. 2

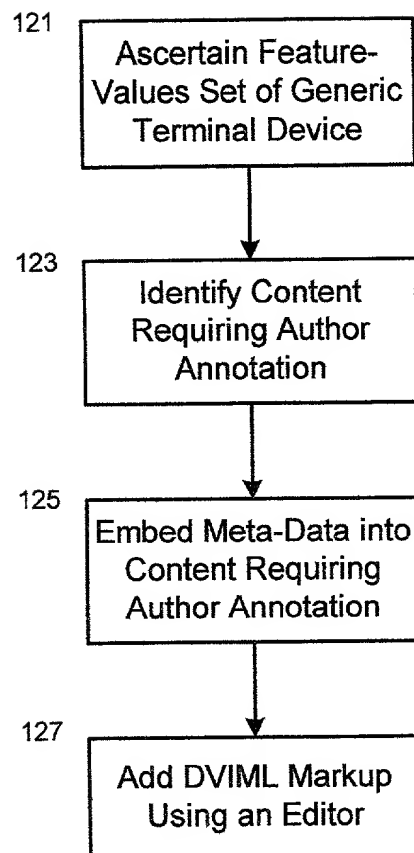


Fig. 3

```

5    <?xml version="1.0" encoding="UTF-8"?>
    <!DOCTYPE dviml PUBLIC "-//DVIML//DTD DVIML 0.1//EN"
    "http://nda.nokia.com/DTD/dviml0.1.xml">
    <dviml version="0.10">
    Giant Deep-Sea Creature
    <area concat="true">
        <segment char="200" >
            Amazes Spanish Scientists
        </segment>
10    <segment char="200">
        Friday November 3 4:35 PM ET    MADRID (Reuters) <br/>
        <segment>
        <segment char="50">
15    Fishermen off northern Spain have captured a giant
        specimen of a strange, light-emitting, deep sea
        cephalopod, scientists said Friday.
        </segment>
        <segment char="100">
20    The octopus-like creature, a taningia danae, weighs in
        at 275 pounds, measures seven feet and is easily the
        biggest of its type discovered. Disappointingly for big
        eaters near the Asturian port of Ribadesella it will not
        end up on their plates, but will be preserved and
        displayed in a marine center whose most impressive
25    cephalopod to date was a mere 140 pound example.
        </segment>
    </area>
    <area concat="false">
        <segment char="50">
30    picture50
        </segment>
        <segment char="200">
        picture200
        </segment>
35    </area>
    </dviml>

```

Fig. 4

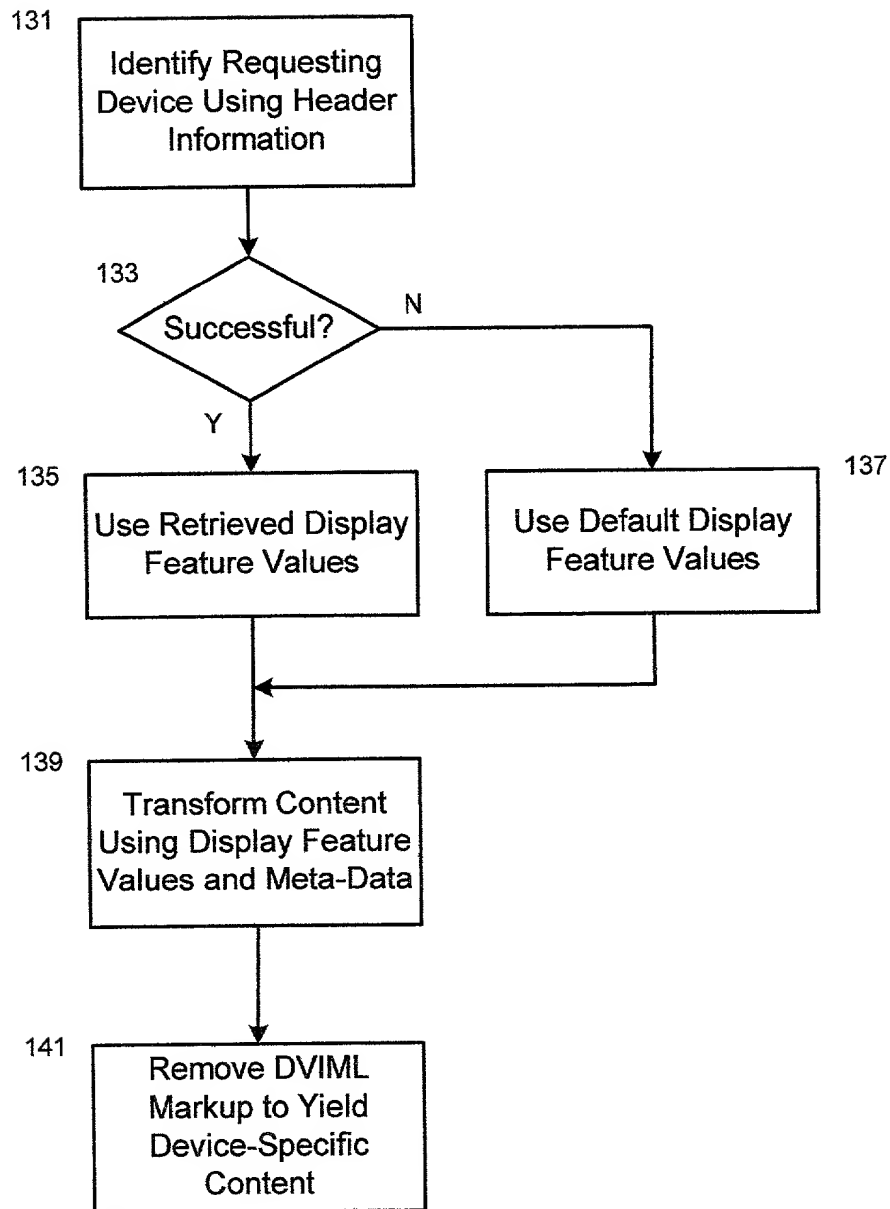


Fig. 5

```

5    <?xml version="1.0" encoding="UTF-8"?>
    <!DOCTYPE wml PUBLIC "-//WAPFORUM//DTD WML 1.1//EN"
    "http://www.wapforum.org/DTD/wml_1.2.xml">
    <wml xmlns:nda="http://nda.nokia.com/deviceAdapter">
6      <card>
7        <p>
8          Giant Deep-Sea Creature
9          <nda:area nda:concat="true">
10             <nda:segment nda:char="200" >
11               Amazes Spanish Scientists
12             </nda:segment>
13           </nda:area>
14         </p>
15         <p>
16           <nda:area nda:concat="true">
17             <nda:segment nda:char="200">
18               Friday November 3 4:35 PM ET
19               MADRID (Reuters) <br/>
20             </nda:segment>
21             <nda:segment nda:char="50">
22               Fishermen off northern Spain have captured a giant
23               specimen of a strange, light-emitting, deep sea
24               cephalopod, scientists said Friday.
25             </nda:segment>
26             <nda:segment nda:char="100">
27               The octopus-like creature, a taningia danae, weighs in
28               at 275 pounds, measures seven feet and is easily the
29               biggest of its type discovered. Disappointingly for
30               big eaters near the Asturian port of Ribadesella it
31               will not end up on their plates, but will be preserved
32               and displayed in a marine center whose most impressive
33               cephalopod to date was a mere 140 pound example.
34             </nda:segment>
35           </nda:area>
36           <nda:area nda:concat="false">
37             <nda:segment nda:char="50">
38               <a href="picture50"> Picture </a>
39             </nda:segment>
40             <nda:segment nda:char="200">
41               <a href="picture200"> Picture </a>
42             </nda:segment>
43           </nda:area>
44         </p>
45       </card>
    </wml>

```

Fig. 6


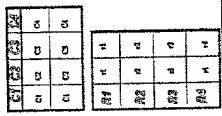
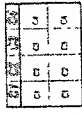
151

FEATURES	VALUES
Color Capability	Boolean
Graphics	None, Low, Medium, High
Display Size	
Input System	Keypad, Keyboard, Stylus
Network Bandwidth	2G, 2.5G, 3G
(other Features)	(Values of Feature)

155

150

161

Content-specific Forms of Feature	DVIML Elements	CONTENT EXAMPLE
X, Y	<nda:rigid>	
Aspect Ratio *Y, Y	<nda:shape>	
Columns *Char Width, Y	<nda:columns>	
X, Rows *Char Height	<nda:list>	Menu Item 1 Menu Item 2 Menu Item 3 Menu Item 4 Menu Item 5 Menu Item 6
X, Char Count, Char Height, Columns	<nda:area>	The feature utilization system proposed in Ruedita has two key ideas: the device is presented as an abstract device which has 'developer-friendly' or 'author-friendly' features, shielding the author from brand-names and minor differences between devices. The content is classified into different types which are, on the other hand, 'device-friendly'. These two key ideas are both aimed at making it easier to develop content for the multi device world of the present day.

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165

160

FIG. 7

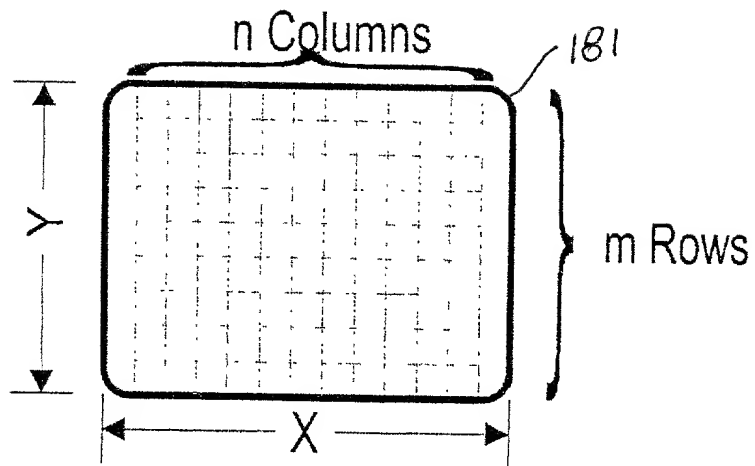


FIG. 8

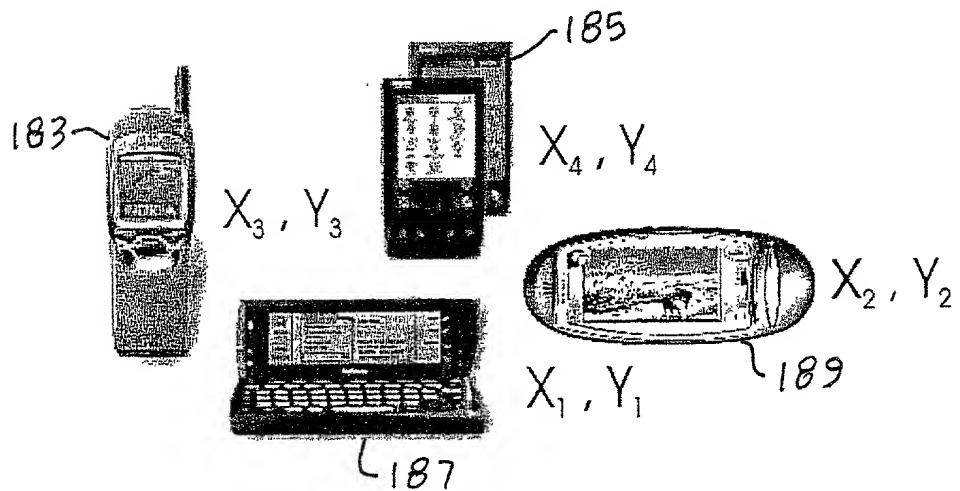


FIG. 9

Display Size DVIML Elements and Values

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Content Characteristic	Relevant Device Display Attribute	DVIML Element	Value for Actual Device	Value for Generic Device
Images (Fixed Form)	X, Y	<rigid>	Zero to infinity and all integers in between (0 to ∞)	Same as for the actual device.
Tables and Vector Graphics (Generated Fixed Form)	ASPECT RATIO	<shape>	Zero to infinity and all numbers in between (0 to ∞)	SQUARE PORTRAIT LANDSCAPE
Columns (Y-Axis Free Form)	COLUMNS	<columns>	Zero to infinity and all integers in between (0 to ∞)	5 10 20+
Lists or Rows (X-Axis Free Form)	ROWS	<list>	Zero to infinity and all integers in between (0 to ∞)	5 10 20+
Text (Bi-axially Free Form)	CHAR COUNT	<area>	Zero to infinity and all integers in between (0 to ∞)	50 100 200+

FIG. 10

Device Profile for Palm Vx (illustrative only)

Feature	Polymorph	Value
Display Size	X, Y	160, 160
	ASPECT RATIO	SQUARE
	COLUMNS	20
	ROWS	20
	CHAR COUNT	200+
Graphics		YES
Color		NO
Keyboard Input		NO
Screen Input		YES

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FIG. 11

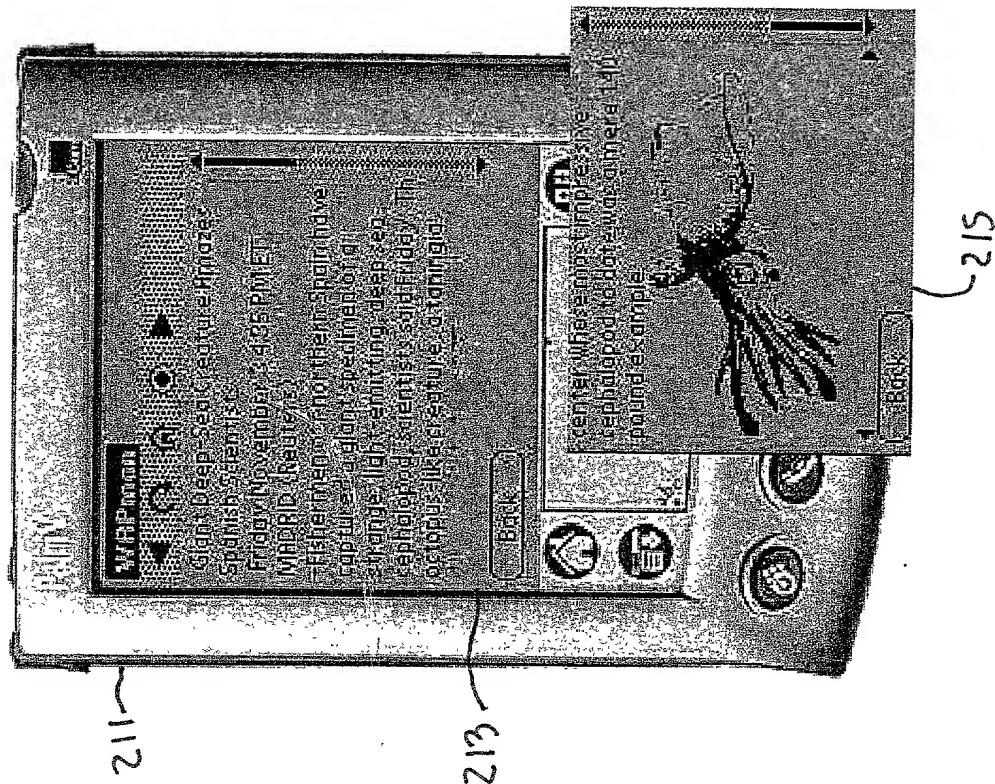
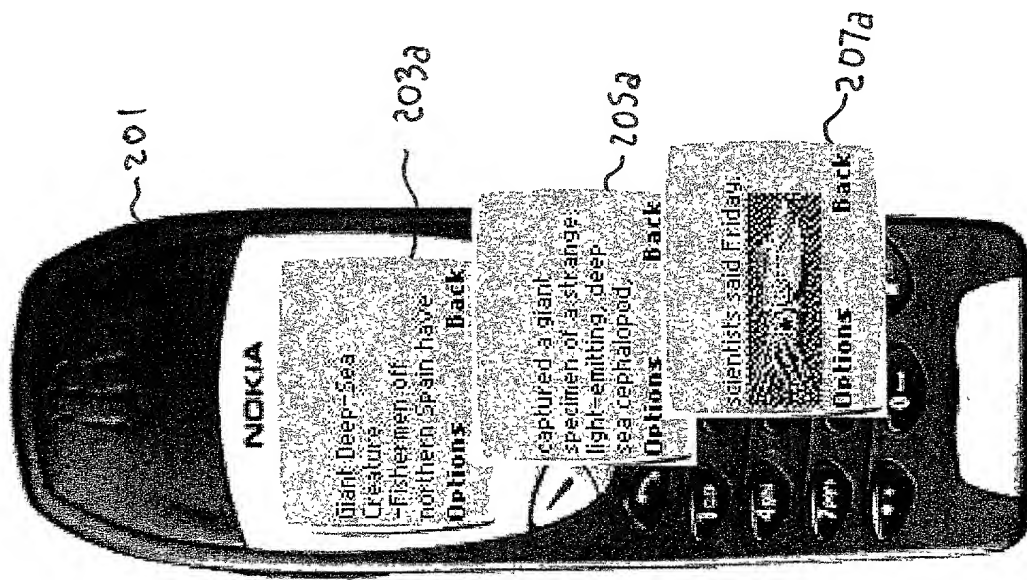


FIG. 12

```

    <?xml version="1.0"?>
    <!DOCTYPE wml PUBLIC "-//WAPFORUM//DTD WML 1.1//EN"
"http://www.wapforum.org/DTD/wml_1.2.xml">
    <wml xmlns:nda="http://nda.nokia.com/deviceAdapter" >
5      <card id="Forecast" newcontext="true" title="Forecast">
        <p align="center">
            <nda:shape>
                <nda:pick nda:aspect_ratio="landscape">
                    <table align="CCCCC" columns="5">
10                      <tr>
                        <td>M</td>
                        <td>T</td>
                        <td>W</td>
                        <td>Th</td>
15                      <td>S</td>
                    </tr>
                    <tr>
                        <td></img></td>
                        <td></img></td>
                        <td></img></td>
25                      <td></img></td>
                        <td></img></td>
                    </tr>
                    <tr>
30                      <td>78 F</td>
                        <td>89 F</td>
                        <td>95 F</td>
                        <td>88 F</td>
                        <td>79 F</td>
35                      </tr>
                    <tr>
                        <td>68 F</td>
                        <td>69 F</td>
                        <td>75 F</td>
40                      <td>68 F</td>
                        <td>65 F</td>
                    </tr>
                </table>

```

Fig. 13A

```

45      </nda:pick>
      <nda:pick nda:aspect_ratio="portrait">
        <table align="LCR" columns="3">
          <tr>
            <td>M&nbsp;M</td>
            <td></img></td>
            <td>Hi 78 F<br></br>Lo 68 F</td>
          </tr>
          <tr>
            <td>T</td>
55      <td></img></td>
            <td>Hi 89 F<br></br>Lo 69 F</td>
          </tr>
          <tr>
            <td>W</td>
60      <td></img></td>
            <td>Hi 95 F<br></br>Lo 75 F</td>
          </tr>
          <tr>
            <td>Th</td>
65      <td></img></td>
            <td>Hi 88 F<br></br>Lo 68 F</td>
          </tr>
          <tr>
            <td>S</td>
70      <td></img></td>
            <td>Hi 79 F<br></br>Lo 65 F</td>
          </tr>
        </table>
      </nda:pick>
      </nda:shape>
80    </p>
  </card>
</wml>

```

Fig. 13B

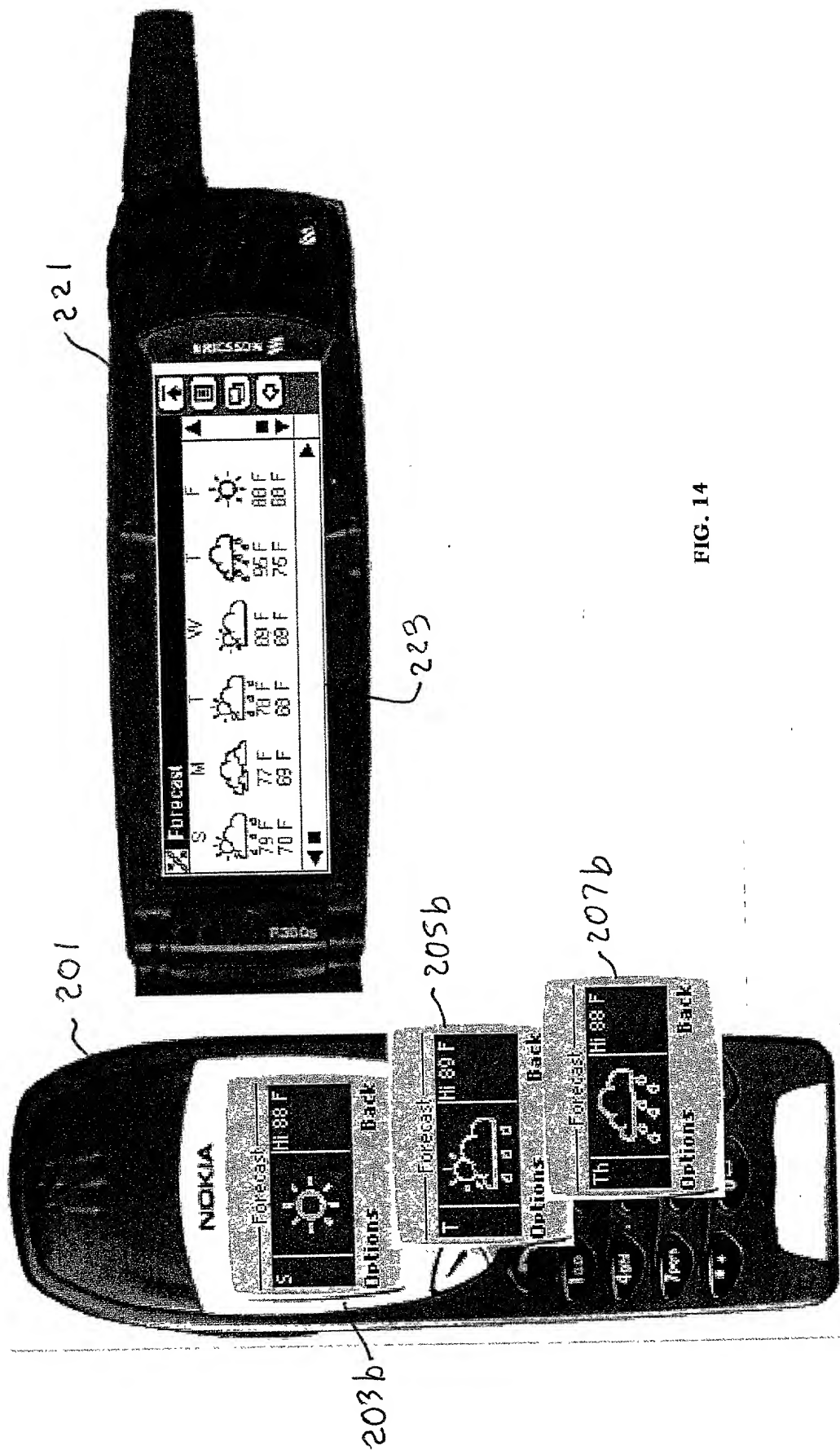


FIG. 14

*Consider an object which has
four features.*

Features = α β χ δ

FIG. 15

*Each Feature may take
different values, denoted by
a different 'font' here.*



α	β	χ	δ
A	B	C	D
<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
A	B	C	D
\mathcal{A}	\mathcal{B}	\mathcal{C}	\mathcal{D}
A	B	C	D
<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>

FIG. 16

A large, dark, irregularly shaped rock with a white letter 'P' carved into its center. The rock is covered with various combinations of the letters A, B, C, and D, some of which are carved into the surface and others are written on it.

125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578
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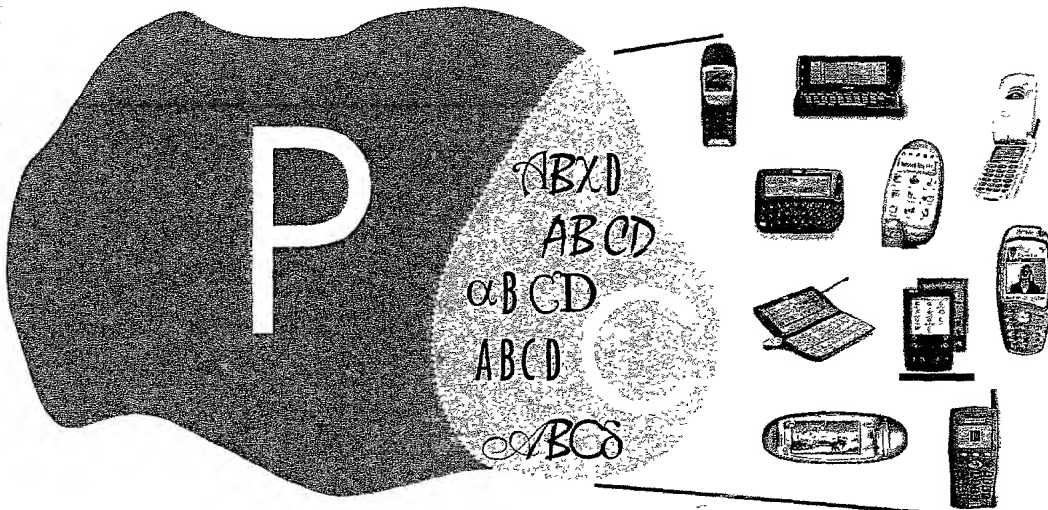


FIG. 18

New Features extend the 'space'. Until we extend our 'alphabet' we do not recognize this space.

New feature, E

ε	α	β	χ	δ
E	A	B	C	D
E	A	B	C	D
E	A	B	C	D
E	A	B	C	D
E	A	B	C	D
E	A	B	C	D

FIG. 19

Old features may converge to a single value, and hence no longer be of interest.

Converged feature, D

ε	α	β	χ	δ
E	A	B	C	D
E	A	B	C	D
E	A	B	C	D
E	A	B	C	D
E	A	B	C	D
E	A	B	C	D

FIG. 20

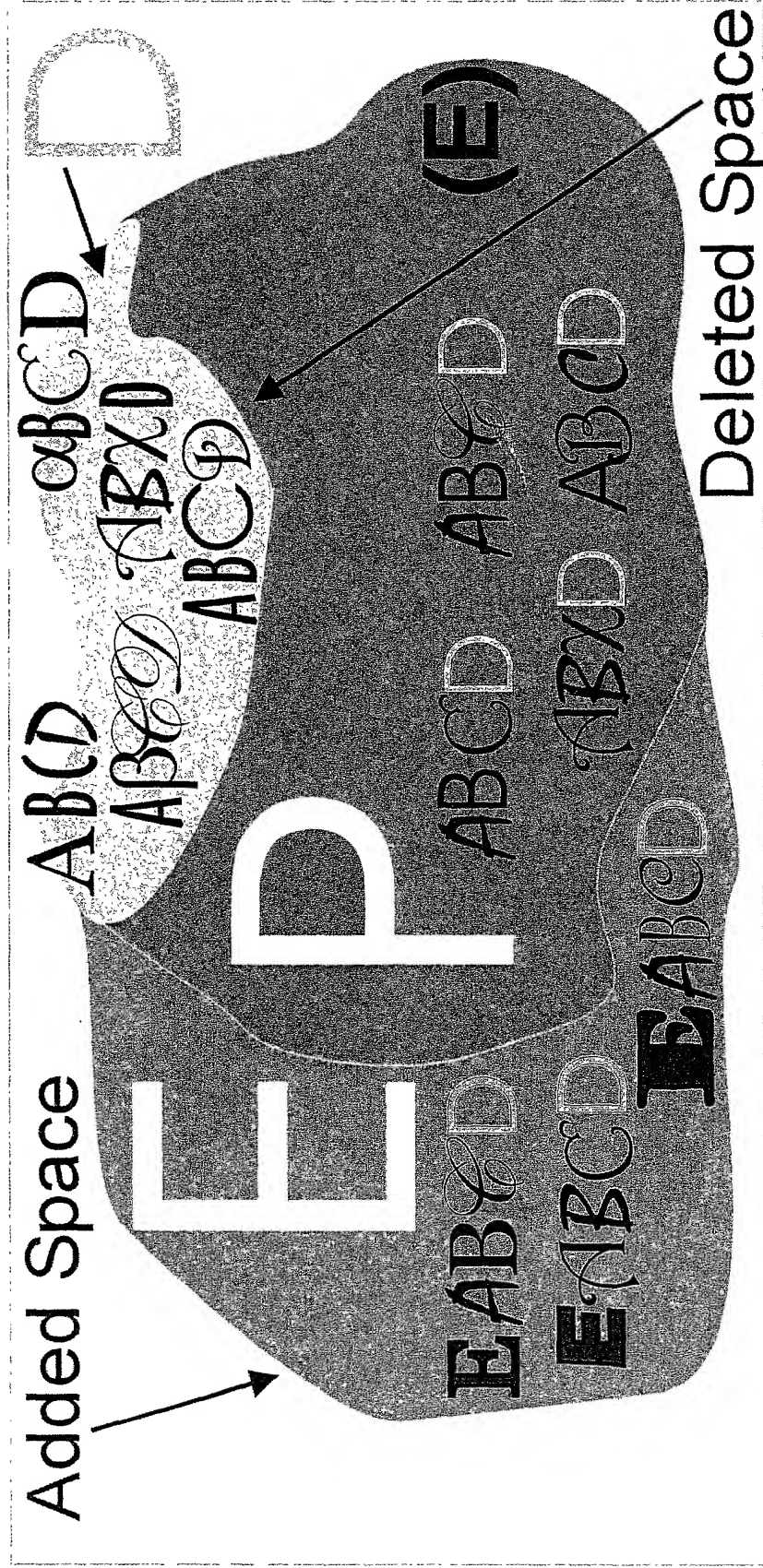


FIG. 21